

Appendix A

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in any given enterprise is known as "the management" of the enterprise. The term therefore covers the process of managing, the combined human ability involved in managing and the personnel required to manage.

More concise definitions have become more common. A sample is this one by Harry A. Hopf in 1942:²² "... it may be well to provide what scientists describe as a 'frame of reference,' in the form of a definition of the term. ... [Management] may be conveniently and accurately summarized and combined in the statement that *management is the direction of an enterprise, through planning, organizing, co-ordinating and controlling of its human and material resources, toward the achievement of a predetermined objective.*"

The 1962 conference referred to above yielded the following summary by Professor Koontz for a useful conceptual framework:²³

[1] ... the establishment of an environment in which people can effectively perform in a formalized group for the attainment of group goals. ... [2] The task of the manager [is] to do those things which establish such an environment for performance. ... [3] divide the activities that managers do (as *managers*, not as salesmen, financiers, engineers, etc.) into a number of functions ... planning (the choosing of goals, policies, procedures, and programs from among available alternatives), organizing (the grouping of things to be done and the establishment of necessary authority relationships to assure results and coordination of effort), staffing (the appraisal, selection, and training of people—the manning of the organization), direction (the guidance, overseeing, and leading of people), and control (the measurement and correction of activities to make sure that plans are being accomplished). ... I have found that this framework is intelligible to the perceptive practitioners, many of whom see their jobs pretty much in this context.

The foreword to a 1964 casebook in Production Management gave this incidental description:²⁴

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agement control principles that are applicable to all parts of an organization.

The framework suggests a way of sorting out various types of research that currently tend to be lumped together. For example, most of the work done under the label of operations research in fact relates to the area that we have called operational control. We have suggested that conclusions that are valid for that process are not necessarily valid for other processes. It is probable that operations research results are not valid for problems such as transfer pricing or the motivation of heads of profit centers.

SOME IMPLICATIONS FOR SYSTEMS DESIGN

From the foregoing analysis, some generalizations can be drawn about the over-all problem of designing planning and control systems.

First, it seems clear that the starting point in construction of the over-all system should be management control, as distinguished from strategic planning, operational control, information handling, or financial accounting. The management control system deals with the ongoing operation of the whole enterprise. It must encompass all parts of the enterprise so as to assist management in determining that the parts are in balance with one another. The central function of a management control system is motivation; the system should be designed in such a way that it assists and guides operating management to make decisions and to act in ways that are consistent with the over-all objectives of the organization.

Strategic planning, management control, and operational control tend to correspond to a hierarchy in any of several dimensions: as to the time span of the consequences (long range, medium-range, day-to-day); as to level in the organization (top management, top and operating management, supervision); as to importance of a single action (major

importance, medium importance, little importance); as to the amount of judgment involved (great, some, none), and so on. Along each of these continuums, management control is in the middle.

Second, although the management control system is the logical starting point, its relationship to the other systems should be recognized. Information useful in strategic planning can be derived from the management control system, and strategic decisions are implemented through it. Recognizing these facts is quite different from designing the management control system as though it included strategic planning, however. The criteria governing the two systems are quite different. Management control is repetitive, it is total, it is systematic, it is internally oriented, it is "people" oriented, it is a line function. Strategic planning focuses on specific problems, it is externally oriented, it is irregular, it is heavily staff oriented, it is logical. The management control system can be designed so as to take into account the more important needs of the strategic planners for current and historical operating information, but it cannot possibly foresee all these needs, nor would it be worthwhile to supply routinely information that is needed only occasionally, even if the need could be foreseen.

Management control also takes information from areas where operational control devices are used, but the coupling between the two need not necessarily be tight. Operational control usually involves a tremendous amount of detail, and all that is needed for management control purposes is a way of summarizing and translating this detail so as to show that operations are proceeding satisfactorily, or, if they are not, where the trouble spots are.

Information handling is subservient to management control. The needs of the latter dictate the construction of the former, and not *vice versa*.

Financial accounting exists alongside management control. In most situations, there is no conflict between the two.

In those few situations where control considerations are

Third, if we regard the central system as the only common denominator around which others are organized, that this central system is the only common denominator of heterogeneous elements, the concern of management is

Fourth, computers are the essence of this central system. The judgment and feeling of the managers and computers they are needed to develop a company-wide model of the repercussions of the whole system. Yet exist, it is to be expected in many companies that the specific areas being controlled by computers are used commonly.

These observations have led to the objective of some systems of integrated data processing. Management control is not to be focused on the details of the system, but should be focused on the results. It should not be much concerned with the irregular character of these problems. Operational control procedures are integrated data processing procedures. The integration of all possible operations is the objective.

Finally, the foregoing theory, or cybernetics, or generalizations about system organization, an organism, or a certain nonliving structure. Within the broad frame

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In those few situations where there is a conflict, management control considerations should be dominant.

Third, if we regard management control as the system around which others are to be constructed, then it is clear that this central system must be a financial system. Money is the only common denominator for bringing together the heterogeneous elements of outputs and inputs that are the concern of management.

Fourth, computers and mathematical models *cannot* be the essence of this central system. In management control, the judgment and feelings of human beings are dominant; in computers they are necessarily absent. In strategic planning, a company-wide model can be valuable as a tool for examination of the repercussions of proposed strategic moves throughout the whole enterprise. Although few such models yet exist, it is to be expected that they soon will be developed in many companies. In operational control, models for the specific areas being controlled are essential, and computers are used commonly.

These observations have implications for the long-run objective of some systems experts, described by them as integrated data processing. The analysis suggests that, because management control is central, integrated data processing should be focused on needs of management control. It should not be much concerned with problems of strategic planning, in view of the irregular, nonrecurring, and unpredictable character of these problems. It should be linked to operational control procedures, as these are developed, but an integrated data processing system need not await the installation of all possible operational control procedures.

Finally, the foregoing analysis should be related to systems theory, or cybernetics, which is a tiny but growing body of generalizations about systems in general, whether in an organization, an organism, an organ, a single cell, or even in certain nonliving structures, such as rivers, stars, and weather. Within the broad framework of systems theory, it may be

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possible and useful to include what are here referred to as management control, operational control, and information handling. It probably will *not* be fruitful to attempt to incorporate strategic planning. Strategic planning, the ability of an organization consciously to modify its structure and process, is unique in the universe.

Systems theorists search for similarities among systems of all types, but they should not let their enthusiasm carry them too far. Most men agree with the Frenchman who said, "Vive la difference!" and their agreement indicates recognition of the fact that the differences, although fewer in number than the similarities, are of fundamental interest and importance.

Notes

A framework to using and control systems work for the general must be constructed and clearly defined, treated. But the search is going on, even after it. These notes summarize appear in the literature of management and (2) planning.

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B.

The Search for a Common

The idea that there is a common framework for, and a theory of, management, was first put forward in 1910, when a specific report put pressure on a group of "scientific management" experts to develop a common framework under circumstances in which users and audience were of importance.

Fifty years of progress in theorizing, of communication,

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Excessively Broad Generalizations

A reason for dwelling at such length on the distinctions between strategic planning and management control is to demonstrate that unless these distinctions are recognized, erroneous generalizations will be made. Some types of such errors are given below.

First, there are those that are applicable to one process, but that are stated as if they were applicable to both. For example, in the following statement Ralph F. Lewis²⁹ clearly has reference only to what here is called management control, although he does not state any limitations as to the type of planning he is describing: "... forward planning can make sense only if the lowest level of supervision is brought into the act." This generalization is not valid for strategic planning.

Similarly, Koontz and O'Donnell³⁰ state without qualification: "One of the best ways of assuring planning communication, with the extra dividend of loyalty to plans, is to enlarge the number of managers participating in planning to the maximum extent possible." These authors undoubtedly had the distinction in mind, but since they did not state it explicitly, their remarks may be misconstrued.

In the same category is the error made by those who say that companies should have a single, unified planning and control system. Conceptually, a management control system should be a single system, or at least an integrated set of subsystems. In practice, the attainment of this goal of "integrated data processing" as it is called, is so fantastically complicated even for a company of moderate size, that few, if any, companies would even claim that they have achieved it. Nevertheless, this is the goal, and those interested in improving management control systems will work toward it.

The error arises in attempts to meet the needs for strategic planning data from the same system. The data needed for

Good!